

...
ALICE ...
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... solubility of Nb_2S_5 in a ...
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L 36942-66 EWT(m)/EWP(t)/ETI LIP(c) JD/JG/WB

ACC NR: AP6020966

SOURCE CODE: UR/0226/66/000/006/0088/0091

AUTHOR: Dokukina, N. V.; Shamray, F. I.

ORG: Institute of Metallurgy im A. A. Baykov (Institut metallurgii)

TITLE: Oxidation resistance of tungsten silicide¹—niobium silicide² alloys

SOURCE: Poroshkovaya metallurgiya, no. 6, 1966, 88-91

TOPIC TAGS: tungsten silicide, niobium silicide, tungsten silicide alloy, niobium silicide containing alloy, alloy oxidation, oxidation

ABSTRACT: A series of tungsten—silicon—niobium alloys with compositions corresponding to WSi_2-NbSi_2 and $W_5Si_3-Nb_5Si_3$ sections were tested for oxidation behavior at 1000, 1100 and 1200C in air with an exposure time of 5 hr. It was found that the unalloyed components (silicides) in both the WSi_2-NbSi_2 and $W_5Si_3-Nb_5Si_3$ systems are not oxidation resistant even at 1000C. The addition of a second component improves oxidation resistance in both systems. In the WSi_2-NbSi_2 system, the lowest weight gain (10 mg/cm^2) in 5 hr at 1000C was shown by alloy containing 19.9% niobium. Under the same conditions, unalloyed $NbSi_2$ had a weight gain of 20 mg/cm^2 , and unalloyed WSi_2 gained 160 mg/cm^2 in 3.5 hr. In the $W_5Si_3-Nb_5Si_3$ system, alloy containing 32.5% niobium had the highest oxidation resistance. Its weight gain in 5 hr tests at 1000C was 10 mg/cm^2 compared to 110 mg/cm^2 for Nb_5Si_3 and 140 mg/cm^2 for W_5Si_3 , the latter in 1.6 hr. Orig. art. has: 6 figures. [DV]

... 164-661 OPTIC REF: 003/ OTH REF: 002/ ATD PRESS: 5139

GOLOVINA, O. A., ROGINSKIY, S. Z., SAKHAROV, M. M., EYDUS, Ya. T., DOKUKINA, Ye. S.

"Study of the Role of Plane Chains in the Synthesis of Hydrocarbons from CO and H₂"

Problems Kinetics and Catalysis, v. 9, Isotopes in Catalysis, Moscow, Izd-vo AN SSSR, 1957. 442p.

Most of the papers in this collection were presented at the Conf. on Isotopes in Catalysis which took place in Moscow, Mar 31- Apr 5, 1956.

DOKUKINA, Ye.S.

GOLOVINA, O.A.; ROGINSKIY, S.Z.; SAKHAROV, M.M.; EYDUS, Ya.T.; DOKUKINA, Ye.S.

Function of straight chains in the synthesis of hydrocarbons from
CO and H₂. Probl. kin. i kat. 9:76-83 '57. (MIRA 11:3)
(Hydrocarbons) (Carbon--Isotopes)

DOKUKINA, Ye. S.

USSR/Physical Chemistry - Kinetics, Combustion, Explosions, Topo-chemistry, Catalysis.

B-9

Abs Jour: Referat. Zhurnal Khimii, No 2, 1958, 3898.

Author : O.A. Golovina, Ye. S. Dokukina, S.Z. Roginskiy, M.M. Sakharov, Ya. T. Eydus.

Inst : Academy of Sciences of USSR. - *Sov. Phys. Chem*

Title : Study of Flat Chain Part in Hydrocarbon Synthesis of CO and H₂.

Orig Pub: Dokl. AN SSSR, 1957, 112, No 5, 864-867.

Abstract: Experiments of hydrocarbon synthesis of CO and H₂ were carried out at 195° on a catalyst of the composition 100 Co : 18 ThO₂ : 100 kieselguhr with addition of 0.78 or 1.45% by volume of C₂H₄ (I) tagged with C¹⁴ to the initial gas mixture of the composition 1CO + 2H₂. It was established that the molar radioactivity (A) of the formed hydrocarbons was stable and did not depend on their molecular weight. The synthesis product yield did not practically change at the change of the tagged I concen-

Card : 1/2

-25-

USSR/Physical Chemistry - Kinetics, Combustion, Explosions, Topo-chemistry, Catalysis.

B-9

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3898.

tration, but the ratio of A of the initial I to the mean A value of produced hydrocarbons, which is equal to 9.6 at 0.78% by volume of I in the initial gas mixture, drops to 4.5 at 1.45% by volume of I. The obtained results indicate the I participation in the initiating of flat growing chains on the catalyst and the close formation speeds of the initiating complex along two parallel ways: with the participation of the added I in the complex formation, and without it. The authors are of the opinion that the obtained results, as compared with the results of an earlier work of hydrocarbon synthesis of CO and H₂ with the addition of tagged C₂H₅OH (see the foregoing abstract) compel one to doubt the correctness of the dehydration-condensation mechanism proposed for the hydrocarbon synthesis on the Co catalyst.

Card : 2/2

-26-

DOKUKINA, Ye.S., otv. za vypusk

[Suburban timetables: Moscow - Noginsk - Petushki, Moscow Railroad;
summer 1961] Raspisanie dvizheniia prigorodnykh poezdov: Moskva -
Noginsk - Petushki, Moskovskoi zh.d.; leto 1961 g. Moskva, Trans-
zheldorizdat, 1961. 77 p. (MIRA 14:6)
(Moscow--Railroads--Timetables)

11.1210
5.1190

33486
S/195/61/002/005/011/027
E111/E185

AUTHORS: Sakharov, M.M., and Dokukina, Ye.S.

TITLE: Kinetic isotope effect of hydrogen in the synthesis of hydrocarbons from carbon monoxide and hydrogen over a cobalt-thorium catalyst

PERIODICAL: Kinetika i kataliz, v.2, no.5, 1961, 710-713

TEXT: The authors claim that previous work on the kinetics of hydrocarbon synthesis from hydrogen and carbon monoxide is largely empirical and can not lead to a definite answer as to the rate-controlling step. Additional information on this can be obtained by studying kinetic isotope effects, and the authors have applied such a study to hydrogen in hydrocarbon synthesis on a cobalt-thorium catalyst. The effect was studied in a circulating apparatus containing 2 g of catalyst (100 Co : 18 ThO₂ : 100 kieselguhr) at 176, 183 and 193 °C. The temperature was kept constant to within 0.1 °C throughout the experiment. Gas was circulated at 180 litres/hour by a glass piston pump. The circulating system had two vessels in parallel, with the aid

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Kinetic isotope effect of hydrogen... S/195/61/002/005/011/027
E111/E185

of which $H_2 + CO$ or $D_2 + CO$ mixtures could be circulated over the catalyst. Each mixture was circulated for 30-40 minutes, the degree of conversion not exceeding 10% (products frozen out in liquid-nitrogen traps). At the end of each experiment the reactants and products were pumped off, the catalyst being periodically treated with hydrogen at 200-220 °C to remove high molecular-weight products. The rates of synthesis for mixtures of different isotope compositions were compared. The rate ratios are equal to the corresponding rate-constant ratios. Under the experimental conditions the value of the ratio approximated to the kinetic isotope effects. It was found that in the temperature range 176 to 193 °C hydrocarbon synthesis proceeded more rapidly from $2CO + D_2$ than from $2CO + H_2$ (on the average 1.3 times more rapidly at 183 °C). The results of the investigation indicate that the rate-controlling stage in the synthesis is chemical and occurs with the participation of hydrogen, either directly or in the form of intermediate compounds. The rate-controlling stage could not be the desorption of growing hydrocarbon chains postulated by some authors (Ref. 1; H.H. Storch, N. Golambik,

Card 2/3

33486

Kinetic isotope effect of hydrogen... S/195/61/002/005/011/027
E111/E185

R.B. Anderson, "The Fisher-Tropsch and Related Syntheses", in Russian, I.L., Moscow, 1954; R.B. Anderson, Catalysis, v.4, 257, 1956; P.W. Darby, C. Kemball, Trans. Faraday Soc., v.55, 833, 1959). The reason for faster synthesis with deuterium-containing mixtures is not clear, but is perhaps connected with higher deuterium concentration on the catalyst surface. Acknowledgments are expressed to S.Z. Roginskiy for advice. There are 1 figure, 1 table and 3 references; 2 Soviet-bloc and 1 non-Soviet-bloc. The English language reference (Ref.1) is as quoted in the text above.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR
(Institute of Chemical Physics, AS USSR)

Card 3/3

5.1190

2209, 12-02, 1287

21000

S/020/61/137/004/025/031
B101/B208

AUTHORS: Dokukina, Ye.S., Roginskiy, S.Z., Corresponding Member AS
USSR, Sakharov, M.M., Topchiyev, A.V., Academician,
Geyderikh, M.A., Davydov, B.E., and Krentsel', B.A.

TITLE: Catalysis on organic semiconductors obtained by heat
treatment of polyacrylonitrile

PERIODICAL: Doklady Akademii nauk SSSR, v. 137, no. 4, 1961, 893- 895

TEXT: It could be assumed on the basis of the bibliography and the generally accepted concept of the catalytic mechanism that organic semiconductors with small forbidden band width and considerable electrical conductivity at room temperature should be active catalysts in redox reactions. Only qualitative data being available so far, it was the purpose of this study to investigate the catalytic activity of polymer semiconductors containing a system of conjugate bonds on redox reactions in the gaseous and vapor phases. The authors have chosen semiconductors from polyacrylonitrile (PAN). Data on preparation and electrical properties of this material are given in Ref. 7 (A.V. Topchiyev, M.A. Geyderikh et al.,

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21500

S/020/61/137/004/025/031
B101/B208

Catalysis on organic ...

DAN, 128, 312 (1959)), and have been reported by M.A. Geyderikh at the International Symposium on Macromolecular Chemistry on June 14 - 18, 1960. Two PAN samples were used: PAN-1 to which 0.01% CuCl_2 was added prior to heat treatment, and which had a specific surface of $0.06 \text{ m}^2/\text{g}$ (determined by means of krypton), and PAN-2 without copper admixture and with a specific surface of $0.04 \text{ m}^2/\text{g}$. Catalytic activity was studied in an apparatus similar to that of G.M. Schwab, N. Theophilides (Ref. 13, see below). The catalysts were annealed at 450°C for 1-3 hr prior to the experiment. Considerable catalytic activity was only observed in the decomposition of formic acid. Experimental data are given in Table 1. The copper admixture was found to be of minor importance. As the change of the decomposition rate v of HCOOH was determined by the continuous method on a stepwise rise of temperature, a constant rate of acid addition, and a low degree of conversion (1 - 10%), the activation energy could be calculated from $\log v = f(1/T)$. It was 21 kcal for PAN-1, and 25 kcal for PAN-2. The catalytic activity of the samples increased from experiment to experiment until it reached a constant value. Activation energy, however, remained nearly constant. A catalytic action of PAN on the decomposition of hydrazine hydrate

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8/020/61/137/004/025/031
B101/B208

Catalysis on organic ...

in NH_3 and N_2 was observed only at high temperatures (250°C) at which the reaction on the glass surface of the vessel and homogeneous decomposition play an important role. The specific activity of PAN with respect to the decomposition of HCOOH is explained by its chemical structure. The N-atoms in the chain of the conjugate bonds are assumed to act as adsorption centers for the acid molecules. By changing the chemical and electrophysical properties of polymers with conjugate double bonds, highly selective catalysts should be obtained which are comparable to those used in fermentative catalysis. This is the reproduction of a report delivered by S.Z. Roginskiy, Corresponding Member AS USSR, before the Uchenyy Sovet Instituta khimicheskoy fiziki Akademii nauk SSSR (Scientific Council of the Institute of Chemical Physics of the Academy of Sciences USSR) on May 27, 1960. Mention is made of A.A. Berlin, L.A. Blyumenfeld, N.N. Semenov. (Ref. 11. Izv. AN SSSR, OKhN, 1959, no. 9, 1689). There are 1 figure, 2 tables, and 14 references: 8 Soviet-bloc and 6 non-Soviet-bloc. The 3 references to English language publications read as follows: K. Tamaru, T. Shimada, Bull. Chem. Soc. Japan, 31, 141, (1958); D.D. Eley, Res. appl. Ind., 12, 293 (1959); G.M. Schwab, N.

Card 3/5

21500

S/020/64/137/004/025/0317
B101/B208

Catalysis on organic...

Theophilides, J. phys. Chem., 50, 427 (1946).

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR
(Institute of Physical Chemistry, Academy of Sciences
USSR), Institut neftekhimicheskogo sinteza Akademii nauk
SSSR (Institute of Petrochemical Synthesis of the Academy
of Sciences USSR)

SUBMITTED: December 24, 1960

Card 4/5

Catalysis on organic ...

Table 1: Results of experiments on the decomposition of formic acid on PAN-1 and PAN-2. Legend:

(1) Number of experiment; (2) temperature, °C; (3) formation rate of gaseous products, ml/hr; (4) H₂/CO ratio; (5) rate of addition of formic acid vapor; (a) PAN.

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S/020/61/137/004/025/031
B101/B208

Таблица 1
Результаты опытов по разложению муравьиной кислоты над ПАН-1 и ПАН-2

№ опыта	Т-ра, °C	Скорость образова- ния газобор. прод., мл/час	Соотношение H ₂ :CO	Скорость подачи паров кислоты, мол. на 1 г кат. в час
ПАН-1				
3-1	242	153	2,8	0,02
3-2	255	205		
3-3	272	494		
ПАН-2				
6-1	200	66	3,2	0,3
6-2	287	232		
6-3	200	402		
6-4	201	86		
7-1	284	114	3,6	0,3
7-2	288	302		
7-3	304	554		
8-1	290	336	—	0,3

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L 10765-63

KPR/EWP(j)/EPF(c)/EWT(m)/FDS--ASD--Ps-l/Pc-l/Pr-l--RM/WW

ACCESSION NR: AP3002021

S/0195/63/004/003/0431/0436

AUTHOR: Boginskiy, S. Z.; Berlin, A. A.; Golovina, O. A.; Dokukina, Ye. S.; Sakharov, M. M.; Cherkashina, L. G.

73
72

TITLE: Catalytic activity of copper polyphthalocyanines on the reaction rate of hydrogen peroxide decomposition

SOURCE: Kinetika i kataliz, v. 4, no. 3, 1963, 431-436

TOPIC TAGS: copper polyphthalocyanines, hydrogen peroxide decomposition, electro-physical properties, catalytic activity

ABSTRACT: The catalytic effect of monomeric copper phthalocyanine and of a series of copper polyphthalocyanines with different electrophysical properties on the reaction rate of H_2O_2 decomposition in an aqueous solution at 20-52 degrees was investigated. Greatest activity, almost equal to that of MnO_2 , was obtained with copper phthalocyanines having the greater degree of polymerization, the greatest electrical conductivity at room temperature and the smallest energy of activation; smallest activity was with less developed polymers with smallest conductivity and greatest energy of activation. Under experimental conditions the Cu phthalocyanine monomer was practically inactive. These results confirm

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L 10705-63

ACCESSION NR: AP3002021

correlation between the electro-physical properties of Cu polyphthalocyanines and their catalytic activity. Orig. art. has: 2 tables, 3 figures, and 2 formulas.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, Academy of Sciences SSSR)

SUBMITTED: 22May62

DATE ACQ: 12Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 005

OTHER: 002

ja/lu

Card 2/2

146 68
I 06211-67 EWT(m)/EWP(j) LJP(c) WN/RM
ACC NR: AP6030703 (AN) SOURCE CODE: UR/0195/66/007/004/0660/0665

AUTHOR: Dokukina, Ye. S.; Golovina, O. A.; Sakharov, M. M.; Aseyeva, R. M. 44 B

ORG: Institute of Chemical Physics, AN SSSR (Institut khimicheskoy fiziki AN SSSR) 15

TITLE: Investigation of the catalytic properties of organic semiconductors prepared by the thermal dehydrochlorination of poly(vinyl chloride) 15

SOURCE: Kinetika i kataliz, v. 7, no. 4, 1966, 660-665

TOPIC TAGS: hydrazine, ^{catalytic} ~~hydrazine~~ decomposition, catalysis, organic semiconductor, catalytic property, chemical reaction kinetics
ABSTRACT: A study has been made of the catalytic activity of polyenes prepared by the dehydrochlorination of chlorinated poly(vinyl chlorides) 400, 500, and 700C on the example of the decomposition of hydrazine, and hydrogen peroxide (as well as acetic acid). Study of the decomposition of hydrazine vapors in the presence of the polymers was carried out under static conditions in a vacuum chamber at 80—180C and pressures below 1 mm Hg. Reaction kinetics were studied from changes in the pressure of gaseous reaction products. The experimental data are given in graphic and tabular form. It was found that overall the polyenes, the decomposition proceeded with a degree of conversion of 80—90% according to the reaction,



UDC: 621.315.592—44

L 06211-67

ACC NR: AP6030703

Up to degrees of conversion of 50—80%, the decomposition was a first-order reaction. The greatest catalytic activity was displayed by the polyene, prepared at 700C. However, no accurate correlation could be established between the catalytic activity, electrical conductivity and unpaired spin concentration for the polyenes. In the case of hydrogen peroxide decomposition, the catalytic activity of the polyenes proved to be very low. Orig. art. has: 2 tables. [W.A. 68] [SM]

SUB CODE: 07, 29/ SUBM DATE: 22Feb65/ ORIG REF: 013/ OTH REF: 003

KOPELOVICH, Aleksandr Pavlovich; DOKUKINA, Ye.V., red.; MIKHAYLOVA,
V.V., tekhn. red.

[Brief handbook on automatic control in ferrous metal-
lurgy] Kratkii spravochnik po avtomaticheskomu reguliro-
vaniu v cherno metallurgii. Moskva, Metallurgizdat,
1963. 407 p. (MIRA 16:12)

(Iron and steel plants--Equipment and supplies)
(Automatic control--Handbooks, manuals, etc.)

BELYAYEV, A.I.; ZHEMCHUZHINA, Ye.A.; PADALKA, Ye.N., kandidat tekhnicheskikh nauk; retsenzent; GULYANITSKIY, B.S., inzhener, retsenzent; ~~DOKUKI-NA, Ye. V.~~ redaktor; CHETVERIKOVA, I., tekhnicheskii redaktor.

[Surface phenomena in metallurgical processes] Poverkhnostnye iavleniia v metallurgicheskikh protsessakh. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1952. 143 p. [Micro-film] (MLRA 7:10)

(Metallurgy) (Surfaces (Technology)) (Surface chemistry)

GALITOVSKIY, V.G.; ASKINAZI, A.I., redaktor; DOKUKINA, Ye.V., redaktor;
MIKHAYLOVA, V.V., tekhnicheskiy redaktor.

[Restoration of winding wires] Restavratsiia obmotochnykh provodov.
Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsevetnoi
metallurgii, 1954. 77 p. [Microfilm] (MLRA 7:10)
(Electric wire)

DOKUKINA, Ye.V.

KATSNEL'SON, Moisey Yefimovich; OZOL', Vladimir Lyudvigovich; CHELYUSTKIN, Aleksandr Borisovich; FIBIKH, V.V., redaktor; DOKUKINA, Ye.V., redaktor; EVENSON, I.M., tekhnicheskii redaktor

[Automatization of tube rolling mills] Avtomatizatsia trubo-prokatnykh stanov. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1954. 109 p. (MIRA 8:7)
(Rolling mills) (Pipe, Steel)

BRAZHNIK, V.S.; YABLONSKAYA, L.V., redaktor; DOKUKINA, Ye.V., redaktor;
EVENSON, I.M., tekhnicheskiiy redaktor ~~-----~~

[Experience in making machine parts at the Krivoi Rog and Novo-
Tagil plants] Opyt izgotovleniia detalei oborudovaniia na Krivo-
rozhskom i Novo-Tagil'skom metallurgicheskikh zavodakh. Moskva,
Gos. nauchno-tekhn. izd-vo lit-ry po cherno i tsvetnoi metallur-
gii, 1955. 76 p. (MLRA 8:7)
(Krivoi Rog--Machine-shop practice)

POPOV, Valentin Mikhaylovich; DOKUNINA, Ye.V., redaktor; MIKHAYLOVA,
V.V., tekhnicheskii redaktor.

[Automation in mine drainage] Avtomatizatsiia rudnichnogo
vodootliva. Moskva, Gos.nauchno-tekhn.isd-vo lit-ry po cherno
i tsvetnoi metallurgii, 1955. 319 p. (MLRA 9:1)
(Pumping machinery)

KOVAL'SKIY, Iosif L'vovich; TROITSKIY, A.V., redaktor; DOKUKINA, Ye.V.
redaktor; VAYNSHTEYN, Ye.B., tekhnicheskii redaktor

[The electrical equipment of ore-dressing plants; textbook for
mechanics'schools and courses]-Elektrooborudovanie obogatitel'-
nykh fabrik; uchebnik dlia shkoli kursov masterov. Moskva, Gos.
nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii
1955, 295 p. (MLRA 8:11)

(Ore dressing) (Electric engineering)

DOKUKINA, YE. V.

FEIGIN, Viktor Vosifovich; ~~DOKUKINA, Ye. V.~~, redaktor; SUSHKIN, I.N.,
redaktor izdatel'stva; EVENSON, I.M., tekhnicheskii redaktor.

[Dynamoelectric amplifiers used in rolling mills] Elektromachin-
nye usiliteli v prokatnykh tsekhakh. Izd. 2-oe, dop. Moskva, Gos.
nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii,
1957. 101 p. (MLRA 10:6)

(Electric controllers) (Electric driving)
(Rolling mills)

До К и К. Л. А, 1/8, 5.

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5-3300

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AUTHOR: 1

121118
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AUTHOR

PHYSIOLOGICAL

ABSTRACT

Card 1/3

1559

NY 76-33-11-12/47

2017/10/27

Colovina, O. A.; Sakharov, N. N.; Dokukina, Ye. S.

Isotopic Data on the Part Played by Two-dimensional Chains in the Synthesis of Hydrocarbons From Carbon Monoxide and Hydrogen

Journal fizicheskoj khimii, 1959. Vol 33, Nr 11, pp 2451-2456
(USSR)

(1938)

The problem of hydrocarbon chains, which completely develop on the surface of the catalyst, has not yet been solved. E. M. Bernstein and V. V. Toyevskiy (Ref 7) have carried out investigations on this subject. A direct proof of the existence of two-dimensional chains at the synthesis of hydrocarbons was obtained by the crystals obtained as a confirmation of this. (Ref 8), who regard the results obtained as a confirmation of the dehydration-condensation mechanism according to al. (Ref 6), and 8) have given no answer to the important question in referring the distribution of reaction activity among Storch, Golobek, and Emerson (Ref 7). However, the important question is referring the distribution of reaction activity among the hydrocarbon synthesized from CO and H_2 on cobalt-nickel catalysts (100 Co : 16 W_{Ni} : 100 kieselgur) has been in-

ASSOCIATION:
CARD 2/3

5/2 1957

Академия наук СССР, Институт физическоy химии, Москва

(Academy of Sciences, USSR, Institute of Physical Chemistry,
Moscow)

Card 3/3

DOKULIL, B.

Treatment of whooping cough with aureomycin. Lek. listy 6
no.15:461-463 1 Aug 1951. (CIML 20:11)

1. Of the Children's Department of the State Regional Hospital
in Gottwaldov (Head -- Bohumir Dokulil, M.D.).

DOKULIL, B., Dr.

Technic of exchange transfusions. Cesk. pediar 12 no.7:615-618 5
July 57.

1. Detske oddeleni JUNZ v Gottwaldove, prednosta Dr. B. Dokulil.
(BLOOD TRANSFUSION
exchange, technic (Cz))

CO

Apparatus for sampling liquids from a reservoir. V.I.
Dobrovolsky. Russ. 30,864, Aug. 31, 1953.

ASH-36A METALLURGICAL LITERATURE CLASSIFICATION

SANDROG *4	SECONDARY MAP ONE ONE	BELLSTONE	BELLSTON ONE ONE ONE
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ BA BB BC BD BE BF BG BH BI BJ BK BL BM BN BO BP BQ BR BS BT BU BV BW BX BY BZ CA CB CC CD CE CF CG CH CI CJ CK CL CM CN CO CP CQ CR CS CT CU CV CW CX CY CZ DA DB DC DD DE DF DG DH DI DJ DK DL DM DN DO DP DQ DR DS DT DU DV DW DX DY DZ EA EB EC ED EE EF EG EH EI EJ EK EL EM EN EO EP EQ ER ES ET EU EV EW EX EY EZ FA FB FC FD FE FF FG FH FI FJ FK FL FM FN FO FP FQ FR FS FT FU FV FW FX FY FZ GA GB GC GD GE GF GG GH GI GJ GK GL GM GN GO GP GQ GR GS GT GU GV GW GX GY GZ HA HB HC HD HE HF HG HH HI HJ HK HL HM HN HO HP HQ HR HS HT HU HV HW HX HY HZ IA IB IC ID IE IF IG IH II IJ IK IL IM IN IO IP IQ IR IS IT IU IV IW IX IY IZ JA JB JC JD JE JF JG JH JI JJ JK JL JM JN JO JP JQ JR JS JT JU JV JW JX JY JZ KA KB KC KD KE KF KG KH KI KJ KL KM KN KO KP KQ KR KS KT KU KV KW KX KY KZ LA LB LC LD LE LF LG LH LI LJ LK LL LM LN LO LP LQ LR LS LT LU LV LW LX LY LZ MA MB MC MD ME MF MG MH MI MJ MK ML MN MO MP MQ MR MS MT MU MV MW MX MY MZ NA NB NC ND NE NF NG NH NI NJ NK NL NO NP NQ NR NS NT NU NV NW NX NY NZ OA OB OC OD OE OF OG OH OI OJ OK OL OM ON OO OP OQ OR OS OT OU OV OW OX OY OZ PA PB PC PD PE PF PG PH PI PJ PK PL PM PN PO PP PQ PR PS PT PU PV PW PX PY PZ QA QB QC QD QE QF QG QH QI QJ QK QL QM QN QO QQ QR QS QT QU QV QW QX QY QZ RA RB RC RD RE RF RG RH RI RJ RK RL RM RN RO RP RQ RR RS RT RU RV RW RX RY RZ SA SB SC SD SE SF SG SH SI SJ SK SL SM SN SO SP SQ SR SS ST SU SV SW SX SY SZ TA TB TC TD TE TF TG TH TI TJ TK TL TM TN TO TP TQ TR TS TT TU TV TW TX TY TZ UA UB UC UD UE UF UG UH UI UJ UK UL UM UN UO UP UQ UR US UT UV UW UX UY UZ VA VB VC VD VE VF VG VH VI VJ VK VL VM VN VO VP VQ VR VS VT VU VV VW VX VY VZ WA WB WC WD WE WF WG WH WI WJ WK WL WM WN WO WP WQ WR WS WT WU WV WW WX WY WZ XA XB XC XD XE XF XG XH XI XJ XK XL XM XN XO XP XQ XR XS XT XU XV XW XX XY XZ YA YB YC YD YE YF YG YH YI YJ YK YL YM YN YO YP YQ YR YS YT YU YV YW YX YY YZ ZA ZB ZC ZD ZE ZF ZG ZH ZI ZJ ZK ZL ZM ZN ZO ZP ZQ ZR ZS ZT ZU ZV ZW ZX ZY ZZ			

DOKUMENTOV, V. I.

PA 65T83

USSR/Petroleum Industry
Pumps

May 1948

"Double-Action Upright Pumps," V. I. Dokumentov, 5 pp

"Neft Khoz" Vol XXVI, No 5

Analysis of the problems: plunger diameter of double-action upright pumps; rod deformation, losses in length of plunger stroke and capacity of depth pumping equipment; loads on rocking-arm tip of oil-well pumps; balancing, amount of counterweight, and motor efficiency of oil-well pumps; the construction of double-action pumps.

LC

65T83

DOKUMENTOV, V.I.

Wear resistance and durability of rodless deep-well piston
pumps. Azerb. neft. khoz. 37 no.7:40-42 J1 '58. (MIRA 11:9)
(Oil well pumps)

11(4)

PHASE I BOOK EXPLOITATION

SOV/2476

Aliverdizade, K.S., A.A. Daniyelyan, V. I. Dokumentov, A.K. Ibatulov,
V.O. Pakhlavuni (Deceased), L.G. Chicherov, and S.V. Yurkevskiy

Raschet i konstruirovaniye oborudovaniya dlya ekspluatatsii neftyanykh
skvazhin (Design and Construction of Equipment for Oil Well Exploitation)
Moscow, Gostoptekhizdat, 1959. 652 p. Errata slip inserted. 3,500 copies
printed.

Exec. Ed.: A.A. Gor'kova; Tech. Ed.: E.A. Mukhina.

PURPOSE: This book is intended for engineers and technicians of oilfields, machine-
building and repair plants, and scientific research institutes. It may also be
useful to students of petroleum vuzes and departments.

COVERAGE: The authors discuss calculation and design principles of equipment used
in oil well operation. In some instances the design of production equipment is
also discussed. No personalities are mentioned. There are 66 references,
all Soviet.

Card 1/4

Design and Construction of Equipment (Cont.)

SOV/2476

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Card 4/4

DOKUMENTOV, V.I.

Concerning certain comparative indices of the performance of
rodless piston pumps. Azerb. neft. khoz. 41 no.11:43-46 N '62.
(MIRA 16:2)

(Oil well pumps)

DZHAFAROV, A.A.; DOKUMENTOV, V.I.

Cutting a window in the production casing when drilling the
second hole of a well. Neft. khoz. 41 no. 7863-66 XI'63
(MIRA 1987)

DOKUMOV, S.

Pathogenesis and clinical aspects of intersexuality in man. Suvrem
med., Sofia no.1:139-144 '61.

(SEX CHARACTERISTICS)

KOLAROV, P., dotsent; DOKUMOV, S.

Stein-Leventhal syndrome. Akush. i gin. 40 no.3:74-77 My-Je '64.
(MIRA 18:6)

1. Kafedra endokrinologii i bolezney obmena (zav. - prof. I.
Penchev) Instituta spetsializatsii i usovershenstvovaniya vrachey,
Sofiya, Bolgariya.

SYIEVA, Genoveva; DOKUMOV, Stoyan

Crystallization of mucus from the cervical canal in the determination of hormonal function of the ovaries. Akush. i gin. 34 no.6: 45-49
N-D '58. (MIRA 12:1)

1. Iz kafedry skusherstva i ginekologii (zav. - prof. N.Nikolov)
Instituta spetsializatsii i usovershenstvovaniya vrachey, Sofiya.

(OVARIES, funct. tests

cervical mucus crystallization test (Rus))

(CERVIX, UTERINE, physiol.

mucus crystallization test in determ. of ovarian funct.
(Rus))

DOKUMOV, St.; PAPA ZOV, G.

Genetic sex in normal individual and in certain sexual developmental anomalies. Suvrem. med. Sofia 10 no.1:55-64 1959.

1. Iz Klinikato po endokrinologija i bolesti na obmianata--ISUL
(Direktor na klin.: prof. d-r Iv. Penchev).

(SEX CHARACTERISTICS.

genetic sex in normal cond. & in sexual develop. abnorm.
(Bul))

DOKUMOV, St.

A. polychromic stain for cytological investigations. Suvrem med.,
Sofia no.11:104-108 '60.

1. From the Chair of Endocrinology and Metabolic Diseases at the
Postgraduate Medical Training Institute in Sofia. (Chairman Prof.
Iv.Panchev)

(STAINS AND STAINING)

(VAGINAL SMEARS)

DOKUMOV, St.

Hyperfolliculinemic syndromes and their modern therapy. Suvrem med.

Sofia no.12:128-133 '60.

(ESTROGENS blood)

(OVARIES dis)

DOKUMOV, S.

Rapid polychromic method of staining vaginal smears. Akush. i gin.
36 no.2:103-104 Mr-Ap '60. (MIRA 13:12)
(VAGINA SECRETIONS) (STAINS AND STAINING (MICROSCOPY))

PENCHEV, Iv.; PAPAZOV, G.; DOKUMOV, St.

A case of true hermatophroditism. Suvrem med., Sofia no.7:75-82
'61.

1. Katedra po endokrinologija i bolesti na obmianata, ISUL Rukov.
na katedrata prof. Iv. Penchev.

(HERMATOPHRODITISM case reports)

DOKUMOV, S.

Colpocytological changes in a full-term newborn girl during the first 10 days of life. Akush.i gin. 37 no.1:37-39 '61.

(MIRA 14:6)

1. Iz kafedry endokrinologii i bolezney pbnena veshchestv (zav. - prof. d-r I. Penchev) Instituta spetsializatsii i usovarshestvovaniya vrachev (Sofiya).

(INFANTS (NEWBORN))

(VAGINA)

PENCHEV, Iv., prof.; DOKUMOV, St., doktor (Bolgariya)

Description and classification of true hermaphroditism; case
report. 14a Probl. endok. i gorm. 8 no.2:118-126 Mr-Ap'62.
(MIRA 16:7)

1. Iz kafedry endokrinologii i bolezney obmena veshchestv In-
stituta spetsializatsii i usovershenstvovaniya vrachey (dir.-
prof. Iv.Penchev).

(HERMAPHRODITISM)

DOKUMOV, St.; GRUBCHEV, V.

Gynecography in various endocrine syndromes. Suvr. med. 13
no.3:56-63 '62.

1. Iz Katedrata po endokrinologiya i bolezni na obmianata
pri ISUL [Institut za spetsializatsiya i usuvurshenstvuvane
na lekarite] (Rukovod. na katedrata Iv. Penchev) i Katedrata
po rentgenologiya i radiologiya pri ISUL [Institut za spetsiali-
zatsiya i usuvurshenstvuvane na lekarite] (Rukovod. na katedrata
doks. G. Khadzhidekov).

(ENDOCRINOLOGY) (UTERUS)

DOKUMOV, Stojan; DACHEV, Georgi

Some histochemical studies on normal ovaries of sexually-mature women. Endokr. Pol. 14 no.6:505-512 N-D '63.

1. Institut pour la Specialisation et le Perfectionnement des Medecins (ISUL), Sofia. Clinique d'Endocrinologie et des Maladies du Metabolisme (Directeur: Prof. dr Iv. Pentchev).

117 AND 118 SERIES

PROCESSING AND PROPERTY INDEX

BC

B-II-4

Preparation of indigo. K. K. GORKESTER, N. S. DOMINGUEZ, and N. S. DAZADOV (Prom. Org. China, 1900, 6, 664-666).—Of a no. of methods tested for production of indigo red-violet, the British Dyestuffs process (B.P. 261,491; B., 1920, 625) is preferred. (C, H, N) may be used instead of C, H, N itself, as specified. R. T.

COMMON ELEMENTS

COMMON VARIANTS INDEX

ASS-SIA METALLURGICAL LITERATURE CLASSIFICATION

12001 SYNDICATE

120000 NIP GUY GAT

EXPLANATION:

12001 SYNDICATE

120000 NIP GUY GAT

12001 SYNDICATE

120000 NIP GUY GAT

1ST AND 2ND ORDERS		PROCESSES AND PREPARATION METHODS	
<p>Dephenolizing waste waters. N. S. Dokunikhin and K. I. Makarov, Russ. 54,550, Feb. 29, 1940. The waters are treated with $FeCl_3$ to form difficultly sol. complexes, and these complexes are adsorbed on activated C or wood charcoal, peat semicoke, or peat or coal breeze.</p>		14	
<p>ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>			
<p>SECTION DIVISION</p>		<p>SECTION DIVISION</p>	
<p>SECTION DIVISION</p>		<p>SECTION DIVISION</p>	

21. 11. 1942

Structure of indigo on the basis of spectral data. N. Donnell and E. Levin (Compt. rend. Acad. Sci. U. S. S., 1942, 35, 110-113).--The absorption curves of the sulphuric esters of indigo and thioindigo leuco-bases have been investigated. The curves for these substances are very similar, whereas those of the corresponding dyes differ considerably. This is probably due to the existence in the indigo mol. of a weakened internal π H bond, which gives rise to the intense colour of the compound.

A. J. W.

DOKUNIKHIN, N. S. Cand. Chem. Sci.

Dissertation: "Problems of Synthesis of the Sulfate Esters of Leuco-Compounds of Vat Dyes." Moscow City Pedagogical Inst imeni V. P. Potemkin, 19 May 47.

SO: Vechernyaya Moskva, May, 1947 (Project #17836)

PA 1/50T19

DOKUNIKHIN, N. S.

USSR/Chemistry - Anthraquinone Aug 49
Ammonia

"The Action of Ammonia on 2-Oxyanthraquinone,"
M. S. Dokunikhin, L. M. Yegorova, Sci Res Inst
of Org Intermediate Products and Dyestuffs Invent
K. Ye. Voroshilov, 3 pp

"Dok Ak Nauk SSSR" Vol LXVII, No 6, pp 1033-5.

Reacts these two substances to form 1-amino-
2-oxyanthraquinone. Outlines preparations and
properties of 1-amino-2-oxyanthraquinone and 1-amino-
2-oxyanthraquinone as well as 1-acetylamino-
1-amino-2-oxyanthraquinone.

1/50T19

USSR/Chemistry - Anthraquinone (Contd) Aug 49

2-oxyanthraquinone, 1-amino-2-benzoyloxyanthra-
quinone, and 1,2-dioxyanthraquinone. Submitted
by Acad V. M. Rodionov 23 Jan 49.

Patent USSR 77,400, Dec. 31, 1949.

1/50T19

DOKUNIKHIN, N.S.

USSR/Chemistry - Aminocarboxylic Acids 21 Dec 51

"Preparation of Aromatic Aminocarboxylic Acids
From Arylisocyanates," N. S. Dokunikhin, L. A.
Gayeva, I. D. Kraft

"Dok Ak Nauk SSSR" Vol LXXXI, No 6, pp 1073-1075

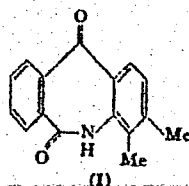
Phenylisocyanate is added to a molten soln of NaCl
in $AlCl_3$. An intermediate compd is formed, which
after heating in 10% NaOH, yielded anthranilic acid.
1,8-Aminonaphthoic acid was prepd from 1-naphthy-
lisocyanate in a similar way. After heating in HCl,
1,8-aminonaphthoic acid yielded naphthostyryl. 5-
Acenaphthylisocyanate did not yield 5,6-aminoacena-
phthene carboxylic acid.

215T14

Dokumikhin, N. S.

USSR

1. Polycyclic compounds. I. Synthesis of tetramethylindanthrone. N. S. Dokumikhin and T. N. Kurdyumova (K. B. Voroshilov State Research Inst. Org. Intermed. and Dyes, Moscow). *Sbornik Statei Obshchei Khim.* 2, 1411-17 (1953). - 2-(3,4-Dimethylbenzoyl)benzoic acid (50 g.) added gradually at -5° to 0° to 2 parts HNO₃ (d. 1.62) over 1.0-1.5 hrs. and kept 7-8 hrs. gave after diln. a ppt. of mixed nitro derivs., which was taken up in NH₄OH and repeatedly crystd. from H₂O, yielding pure NH₄ salt of 2-(5-nitro-3,4-dimethylbenzoyl)benzoic acid; free acid, decomp. 180-2° (monohydrate). Heating 70.6 g. mixed NH₄ salts (above) with 5% NH₄Cl soln. preheated with 20 g. cast Fe filings to 60° 4 hrs., followed by addn. of 100-200 g. more filings and heating 1 hr. at 80-85° gave after sepn. of the sludge, neutralization with NaOH, filtration (hot) and acidification of alk. filtrate isomeric amino acids, which, heated with 10% H₂SO₄ and cooled, gave a ppt. of a lactam (I), 33.5%, m. 190-3°; the filtrate from this on adjustment to pH 3.75-4



04 E N

DOVNIKHI, N.S.

gave 33.0 g. 2-(5-amino-3,4-dimethylbenzoyl)benzoic acid (II), decomp. 165-6.5° (from aq. MeOH). The lactam, purified through Na salt, m. 197-9°; it yields 2-(5-amino-3,4-dimethylbenzoyl)benzoic acid, decomp. 165-6.5°, indicating the formation of some 2-ultra acid in the nitration. Heating 35.8 g. II in 18 parts 93-6% H₂SO₄ 4 hrs. at 125-30°, dilg. to 77% acid, heating rapidly to 110°, and letting the mixt. stand overnight gave 38% 2-amino-3,4-dimethylanthraquinone, m. 234-6°, after treatment of the pptd. sulfate with hot H₂O. Dila. of the filtrate gave 1-amino-2,3-dimethylanthraquinone, m. 210-12°, mixed with 2-amino-3,4-dimethylanthraquinone, sepd. chromatographically. Heating 2-(2-amino-3,4-dimethylbenzoyl)benzoic acid with H₂SO₄ 4 hrs. at 125-30° gave 62% 1-amino-2,3-dimethylanthraquinone, red, m. 209-12.5°, freed from traces of lactam by washing with hot 10% NaOH. The chromatographic sepn. was made over Al₂O₃ in polychlorinated benzene with development by CCl₄; the more mobile red zone on elution with MeOH gave 1-amino-2,3-dimethylanthraquinone, m. 211-12.5°, while the less mobile yellow zone gave 2-amino-3,4-dimethylanthraquinone, m. 230-40.5°. The latter dissolved in 8-10 parts H₂SO₄, poured into much H₂O, and the resulting suspension treated with Br 6-7 hrs. at 20°, then 8 hrs. at 90°, gave 95% 1-bromo-2-amino-3,4-dimethylanthraquinone (III), yellow-orange. Similarly, was prepd. 1-bromo-1-amino-2,3-dimethylanthraquinone, red, decomp. 183-4°. To 8.5 g. MgO suspended in 200 ml. trichlorobenzene with 13 g. NaOAc and 1.3 g. CuO was added 12.8 g. III at 120-40° and the mixt. heated 11-12 hrs. at 180° gave 54% 3,3',4,4'-tetramethylindanthrone, blue, purified through the sulfate by sepn. from 62-3% H₂SO₄; needles (from 1-C₆H₅Cl).

G. M. Kosolapov

2/2

DOKUNIKHIN, N. S.

Simultaneous reduction and chlorination of aromatic nitro compounds in molten aluminum chloride. N. S. Dokunikhin and M. M. Sergeeva. *Doklady Akad. Nauk SSSR*, 88, 987-99 (1953). Simultaneous reduction of NO_2 to NH_2 and extensive chlorination of the aromatic ring can take place when aromatic compds. with a NO_2 group are subjected to the action of molten AlCl_3 - NaCl . This reaction was observed with $m\text{-C}_6\text{H}_4(\text{NO}_2)_2$, $2,4\text{-(O}_2\text{N)}_2\text{C}_6\text{H}_2\text{Cl}$, and $p\text{-O}_2\text{NC}_6\text{H}_4\text{CO}_2\text{H}$, with Al dust, Zn dust, Cu_2Cl_2 or SnCl_4 as reducing agents; good results were obtained only with the last 2 reducing agents, which gave 80-95% poly-Cl derivs. The HCl necessary for the reaction is formed by interaction of H_2O and AlCl_3 , or is introduced with the reducing agents. The NO_2 compd. is added to a molten mass of 180 g. AlCl_3 and 30 g. NaCl at $125\text{--}50^\circ$ and the mixt. treated with the reducing agent over 3-4 hrs. In the reactions of $m\text{-C}_6\text{H}_4(\text{NO}_2)_2$ and $2,4\text{-(O}_2\text{N)}_2\text{C}_6\text{H}_2\text{Cl}$, steam distn. of the acidified mixt. gives some $2,4,6,1,3\text{-Cl}_5\text{C}_6\text{H}(\text{NH}_2)_2$ (I), m. $141.5\text{--}2.0^\circ$ (from EtOH), which with N oxides in hot EtOH yields $1,3,5\text{-C}_6\text{H}_3\text{Cl}_3$, m. $63.2\text{--}3.5^\circ$. The filtrate after addn. of alkali yields on steam distn. other less chlorinated derivs. of the diamine. The reaction of $p\text{-O}_2\text{NC}_6\text{H}_4\text{CO}_2\text{H}$ gives $3,5,4\text{-Cl}_3(\text{H}_2\text{N})\text{C}_6\text{H}_2\text{CO}_2\text{H}$, m. $288\text{--}8.5^\circ$ (decompn.), while the filtrate contains monochlorinated and free p -aminobenzoic acids. The reaction with $1,5\text{-C}_6\text{H}_3\text{Bz}_2$ and $m\text{-C}_6\text{H}_4(\text{NO}_2)_2$ gives $3,4,8,9\text{-dibenzpyrene-5,10-quinone}$ and I. Generally an increase of the proportion of the NO_2 compound leads to more extensive chlorination of the ring. The reaction with $1,5\text{-C}_6\text{H}_3\text{Bz}_2$, $p\text{-O}_2\text{NC}_6\text{H}_4\text{CO}_2\text{H}$, and $p\text{-ClC}_6\text{H}_4\text{NH}_2$ gave a nearly quant. yield of $2,4,6\text{-Cl}_3\text{C}_6\text{H}_3\text{NH}_2$, showing that the reduction and the chlorination are consecutive reaction steps. The NO_2 compds. themselves are recovered unchanged on simple heating in AlCl_3 - NaCl ; however, a mixt. of 5 g. $2,4\text{-(O}_2\text{N)}_2\text{C}_6\text{H}_2\text{Cl}$ and 5 g. $m\text{-C}_6\text{H}_4(\text{NH}_2)_2$ gave 1.5 g. I. Thus, the reaction of the NO_2 compds. requires an intermediate substance, probably the nitroso compds., as supported by the following expts. PhNO reacts vigorously in molten AlCl_3 - NaCl with much destruction of the org. matter even at 105° ; however, small yields of mono-, di-, and trichloroaniline were isolated. PhNHOH also reacts vigorously and yields some 15% $p\text{-ClC}_6\text{H}_4\text{N}_2\text{Ph}$, m. $88\text{--}9^\circ$. Azo compds. are rather stable, much material remaining unchanged in molten AlCl_3 - NaCl , with small yields of PhNH_2 and PhI .

G. M. Kozlov

DOKUNIKHIN, N.S.

Organic isocyanate series. I. Transformation of isocyanates of the benzene series under the influence of aluminum chloride. N. S. Dokunikhin and L. A. Gasya (K. E. Voroshilov Org. Intermed. and Dye Inst., Moscow). *Zhur. Obshchei Khim.* 23, 606-10 (1953); cf. *C.A.* 48, 4487d. —Aromatic isocyanates and their dimers with a molten mixt. of AlCl_3 -NaCl yield 3-phenyl-2,4-dioxotetrahydroquinazoline derivs. These decompose on heating into aromatic amines and salts of the corresponding aminobenzoic acids. The reaction is useful for the introduction of CO_2H in *o*-position to an NH_2 group. PhNCO (12 g.) added at $135-40^\circ$ to a melt of 97 g. AlCl_3 and 23 g. NaCl, the mixt. stirred 0.5 hr., treated with ice, the product washed with dil. HCl, extd. with hot 2% Na_2CO_3 , and the ext. cooled gave 49.2% 3-phenyl-2,4-dioxotetrahydroquinazoline (I), m. $280-1.4^\circ$ (from AcOH). A 64.3% yield results from similar treatment of PhNCO dimer, m. $175.2-6.0^\circ$, obtained from PhNCO and dry pyridine in 3 days at room temp. I is also formed readily by passing dry HCl into an EtOH soln. of *o*- $\text{PhNHCONHC}_6\text{H}_4\text{CO}_2\text{H}$. I (4 g.) heated 6 hrs. with 60 ml. 10% NaOH, then extd. with C_6H_6 and acidified with HCl to pH 3.5-4.0, gave 1.78 g. *o*- $\text{H}_2\text{NC}_6\text{H}_4\text{CO}_2\text{H}$ acid. *o*- $\text{MeC}_6\text{H}_4\text{NCO}$, b. $184-8^\circ$, treated as above with AlCl_3 -NaCl gave 24% 3-(*o*-tolyl)-8-methyl-2,4-dioxotetrahydroquinazoline (II), m. $225-7^\circ$ (from AcOH), which yielded 71.4% 3,2- $\text{Me}(\text{H}_2\text{N})\text{C}_6\text{H}_3\text{CO}_2\text{H}$ (III), m. $170.8-2.2^\circ$ (from H_2O). *m*- $\text{MeC}_6\text{H}_4\text{NCO}$, b. $187.2-7.4^\circ$, treated as above gave 50.8% 3-(*m*-tolyl)-7-methyl isomer of II, m. $290.5-2.6^\circ$ (from iso-BuOH), which gave 70% 4-*Me* isomer of III, m. $176-7.2^\circ$. *p*- $\text{MeC}_6\text{H}_4\text{NCO}$, b. $187-9^\circ$, gave 44% 3-(*p*-tolyl)-6-methyl isomer of II, decomp. $288-90^\circ$ (from EtOH), also formed in 50% yield on similar treatment of the isocyanate dimer, m. $185-6^\circ$; the product gave 44.2% 5-*Me* isomer of III, m. $173.8-4.8^\circ$ (from dil. MeOH). COCl_2 and (*o*- $\text{ClC}_6\text{H}_4\text{NH}_2$) CO gave *o*- $\text{ClC}_6\text{H}_4\text{NCO}$, b. $290-8^\circ$, converted to 48.1% 3-(*o*-chlorophenyl)-8-chloro-2,4-dioxotetrahydroquinazoline (IV), m. $223-4^\circ$ (from EtOH),

which gave 88% 3-chloroanthranilic acid (V), m. $190.8-1.2^\circ$ (from H_2O); the latter (0.2 g.) treated in refluxing EtOH with N oxide stream, and the soln. dild. with H_2O , made strongly alk. with NaOH, refluxed to hydrolyze the intermediate ester, concd., and acidified, gave *m*- $\text{ClC}_6\text{H}_4\text{CO}_2\text{H}$, m. $154-6^\circ$. *m*- $\text{ClC}_6\text{H}_4\text{NCO}$, b. $200-3.5^\circ$, gave 48.6% 3-(*m*-chlorophenyl)-7-chloro isomer of IV, m. $309.5-11.0^\circ$ (from AcOH), which yielded 81% 4-*Cl* isomer of V, m. $238.5-9.5^\circ$ (from dil. EtOH). *p*- $\text{ClC}_6\text{H}_4\text{NCO}$, b. $203-4^\circ$, gave 48.4% 3-(*p*-chlorophenyl)-6-chloro isomer of IV, m. $323.5-5.0^\circ$ (from AcOH), formed in 62% yield by similar treatment of RNCO dimer, does not m. 170° , obtained from the monomer in pyridine for unstated period. The quinazoline gave 78% 6-*Cl* isomer of V, m. $210-10.5^\circ$ (from H_2O). 2,5- $\text{Cl}_2\text{C}_6\text{H}_3\text{NCO}$, b. $233-3.5^\circ$, m. $27.4-8.8^\circ$ (from CCl_4), gave 41.2% 3-(2,5-dichlorophenyl)-5,8-dichloro-2,4-dioxotetrahydroquinazoline, m. $281.8-3.0^\circ$ (from iso-BuOH); the isocyanate (6 g.) fused with AlCl_3 -NaCl at $155-60^\circ$, the product treated with ice, the ppt. washed with 10% NaOH, boiled 6 hrs., the mixt. filtered, and the filtrate acidified gave 48.6% 3,6-dichloroanthranilic acid, m. $162.8-4.0^\circ$ (from H_2O). 2,4- $\text{Me}_2\text{C}_6\text{H}_3\text{NCO}$, b. $211.2-12.0^\circ$, gave 23.8% 3-(2,4-dimethylphenyl)-6,8-dimethyl-2,4-dioxotetrahydroquinazoline, m. $253-4.5^\circ$ (from iso-BuOH); the usual treatment of the RNCO gave 12.3% 2-amino-3,5-dimethylbenzoic acid, m. $189.6-80.8^\circ$. COCl_2 and *p*- $\text{H}_2\text{NC}_6\text{H}_4\text{Ph}$ gave *p*- $\text{PhC}_6\text{H}_4\text{NCO}$, m. 55.5° , which heated with AlCl_3 -NaCl at $135-40^\circ$ and treated as above, gave 65.5% 4,2-*Ph*-(*H*,*N*) $\text{C}_6\text{H}_3\text{CO}_2\text{H}$, m. $202.6-3.8^\circ$ (from dil. EtOH).

G. M. Kosolapoff

DOCUMENT #11, N.S.

Organic isocyanates. II. Transformation of isocyanates
of the naphthalene series under the action of al-
chloride. *U.S. Pat. 2,840,000 (1959)*
C.A. 45, 4457d H. L. H. *44*

DOKUNIKHIN N. S.

Action of ammonia on 1-hydroxyanthraquinone. N. S. Dokunikhin and I. A. Novitskaya. *Zhur. Obshch. Khim.* 39, 1736-1738 (1965); *Ch. U.S. 3,443,323, C.A. 43, 6854c, 44, 10448b*. — Heating 20 g. 1-hydroxyanthraquinone with 273 g. 25% aq. NH_4OH 6 hrs. at 131–40°, adding 29 ml. 2% NaOH. Filtering, and acidifying the filtrate with HCl gave a red-brown ppt., m. 218–23°. Brtg. the original ppt. with much 2% NaOH at 62° and acidifying gave an addnl. amt. of red-brown solid, m. 207–24°. Chromatographing the combined material in PhCl on Al_2O_3 , sepz. the main blue-violet zone, eluting it with 4% NaOH, and acidifying the eluate with HCl gave 0.5 g. red-brown solid, m. 257–8° (from AcOH), identified as 2-amino-1-hydroxyanthraquinone, which gives a blue-violet ppt. with $\text{Ba}(\text{OH})_2$. Heating 8 g. alizarin with 133 g. 30% NH_4OH 5 hrs. at 150°, filtering, and acidifying with HCl gave 1.53 g. 1-hydroxy-2-aminoanthraquinone, which after chromatographic purification gave material, m. 257–8°, identical with that described above. The same material was isolated from the products of ammonolysis of 1-anthraquinonesulfonic acid; no detailed description of the expt. is given. C. M. K.

DOKUNIKHIN, N. S. (Cand. Chem. Sci.)

"USSR Progress in Production and Application of Organic Dyestuffs," Nauka i Zhizn',
Vol 21, No 1, p 33, 1954

Translation W-31266, 6 Jun 55

DOKUNIKHIN, N. S.

USSR/Chemistry - Aromatics

Card 1/1 Pub. 151 - 32/36

Authors : Dokunikhin, N. S.; Gaeva, L. A.; and Pletneva, I. D.

Title : Organic isocyanates. Part 3.- Reaction of aromatic isocyanates with halides

Periodical : Zhur. ob. khim. 24/1, 174-178, Jan 1954

Abstract : Data are presented regarding the reaction between aromatic organic isocyanates with halides. The chlorination of phenyl- and 1-naphthylisocyanates was investigated and the results are described. It was established, in contradiction to the Gumpert and Curtius data, that arylisocyanates do not form addition products with Cl and Br. The characteristics of phenylisocyanate, obtained during the heating of 1- and 2-naphthylisocyanates with N,N'-diphenylurea and acetanilide, are described. Eleven references: 2-USSR; 5-USA and 4-German (1875-1953).

Institution : The K. E. Voroshilov Scientific Research Institute of Organic Semiproducts and Dyes

Submitted : July 23, 1953

DOKUNIKHIN, N. S.

USSR/Chemistry - Conversion processes

Card 1/1 Pub. 151 - 33/37

Authors : Dokunikhin, N. S., and Gayeva, L. A.

Title : Investigation of organic isocyanates. Part 4.- Conversion of phenyl- and 1-naphthylisothiocyanates in the presence of aluminum chloride

Periodical : Zhur. ob. khim. 24/10, 1871-1873, Oct 1954

Abstract : The derivation of 3-phenyl-2,4-dithion-tetrahydroquinazoline and 2-mercaptobenzthiazole through the reaction of phenylisothiocyanate with aluminum chloride and the derivation of thionaphthostyryl from the reaction of 1-naphthylisothiocyanate with $AlCl_3$, are described. The process of converting thionaphthostyryl into naphthostyryl is explained. Seven references: 4-German; 2-USSR and 1-USA (1876-1954).

Institution : The K. E. Voroshilov Scientific Research Institute of Organic Semi-Products and Dyes.

Submitted : May 5, 1954

DOKUNIKHIN, N.S.; KURDYUMOVA, T.N.

Investigation in the polycyclic quinone series. Part 2
1,4-diaryldiaminoanthraquinones. Zhur.ob.khim 25 no.3:
617-622 Mr '55 (MLRA 8:6)

1. Nauchno-issledovatel'skiy institut organicheskikh polu-
produktov i krasiteley imeni K. Ye. Voroshilova.
(Anthraquinone)

DOKUNIKHIN, N. S.

USSR/Physical Chemistry - Molecule. Chemical Bond, B-4

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 60822

Author: Shigorin, D. N., Dokunikhin, N. S.

Institution: None

Title: Nature of Hydrogen Bond and Its Influence on Vibration and Electron Spectra of Molecules

Original

Periodical: Zh. fiz. khimii, 1955, 29, No 11, 1958-1973

Abstract: Investigated were the infrared absorption spectra of crystals and vapors of anthraquinone and its derivatives, 1-chlor-, 2-chlor-, 1,5-dichlor-, 1,8-dichlor-, 2-methyl-, 1-hydroxy-, 2-hydroxy-, 1,5-dichlor-, 1,8-dichlor-, 2-methyl-, 1-hydroxy-, 2-hydroxy-, 1,2-dihydroxy-, 1,4-dihydroxy-, 1,5-dihydroxy-, 1,8-dihydroxy-, naphthazarin, 1,2,4-trihydroxy-, 2-hydroxy-3-chlor-, 1-hydroxy-2-methyl-, leucoquinizarin, leuco-1,4-diamino-, indanthrone, 3,4-phthaloylacridone, 1-chlor-4-benzoylamino-, 1,4-di-p-toluido-, 1,4-dimesidido-, 2,3-dimethyl-1,4-p-toluido-, N,N'-bis-1-anthraquinonylizophthaloyldiamide, N,N'-bis(2-methyl-1-anthraquinonyl)-iso-phthaloyldiamide, 1-methylamino-, 1-methylamino-4-brom-,

Card 1/2

USSR/Physical Chemistry - Molecule. Chemical Bond, B-4

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 60822

Abstract: 2-amino-, 1,4-diamino-2,3-dimethyl-, 1,5-diamino-, 1-amino-, 1-amino-3-chlor-, 1-amino-4-chlor-, 1-amino-5-chlor-, 1-amino-2-methyl-, 1-amino-2-methyl-4-chlor-, and 1-amino-5-benzylamino-. It was found that bands of α -OH groups, taking part in formation of intramolecular hydrogen bonds are characterized by greater half-width (by 6-7 times) than bands of β -OH groups taking part in intermolecular hydrogen bonds, and are sharply displaced into long wave region. The C = O band, the frequency of which in anthraquinone is $1,672\text{ cm}^{-1}$, in α -hydroxy anthraquinones is shifted to $1,630\text{ cm}^{-1}$. The peculiar behavior of the bands of α -OH groups is explained, in the light of previously developed notions (Referat Zhur - Khimiya, 1954, 17732, 39174, 47723; 1955, 48318; 51300, 51301) by participation of the electron of hydrogen atom of group O-H or NH in the interaction with π -electrons of the molecule ($\sigma \rightarrow \pi$ deformation).

Card 2/2

Dokunikhin, N.S.

USSR/Optics - Spectroscopy

K-6

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 13010

Author : Shigorin, D.N., Dokunikhin, N.S., Gribova, Ye.A.

Inst : -

Title : Vibrational and Electronic Spectra of Indigo and its Halide Derivatives.

Orig Pub : Zh. fiz. khimii, 1955, 29, No 5, 867-876

Abstract : An investigation was made of the absorption spectrum of indigo (I), thioindigo (II), tetrachloro-indigo (III), and tetrabromo-indigo (IV) in the visible and infrared regions. In the spectrum of a crystal of I, the frequency of the valent N-H vibrations is reduced to 3275 cm^{-1} , owing to the formation of intermolecular hydrogen bonds $M \cdots H \cdots O = C$. In the spectrum of vapors of I, the frequency of the N -- H vibrations comprises 3405 cm^{-1} , and the electron absorption shifts by 100 millimicrons towards the short-wave side, owing to changes in the

Card 1/2

USSR/Optics - Spectroscopy

K-6

Abs Jour : Ref Zhur - Fizika, No 5, 1957, 13010

distribution of the π -electron density during the break of the hydrogen bonds. There are no intermolecular hydrogen bonds in crystals of III and IV, since the frequency of the C=O oscillations, 1650 cm^{-1} , does not differ from the C=O frequency in II. It is assumed that there exists weak intra-molecular hydrogen bonds N-H...X (X is iether Cl or Br); the N -- H band os less shifted than in I (3385 cm^{-1}), and is less intense. In III and IV no considerable changes in the electronic spectra are observed upon transition from the crystal to the solution, in accordance with the assumption concerning the intra-molecular hydrogen bonds. An attempt is made of explaining qualitatively the changes in the coloring of the derivatives of I as functions of the influence of various substitutes or of the intermolecular interaction on the distribution of the π -electron density.

Card 2/2

USSR/Chemistry - Physical chemistry

Card 1/1 Pub. 147 - 4/22

Authors : Shigorin, D. N., and Dokunikhin, N. S.

Title : Nature of the hydrogen bond and its effect on the oscillation and electron spectra of molecules

Periodical : Zhur. fiz. khim. 29/11, 1958-1973, Nov 1955

Abstract : The infrared absorption spectra of numerous compounds of oxy-and amino derivatives of anthraquinone were measured in the valent oscillation zone of C = O, O - H and N - H groups. It was found that the intramolecular hydrogen bond included in the conjugated bond system causes considerable changes in the π -electron reaction in the entire molecule and a certain change in energy of the system on the whole. The stability of such hydrogen bonds is discussed. It was established that a hydrogen bond with a π -electron interaction is a weak link in the chain of π -electron excitation. Twenty references: 15 USSR, 3 USA and 2 Germ. (1914-1955). Tables; graph.

Institution : The Physicochemical Institute im. L. Ya. Karpov, Moscow

Submitted : May 19, 1955

Dokunikhin, N.S.

USSR/ Physics - Physical chemistry

Card 1/2 Pub. 22 - 33/52

Authors : Shigerin, D. H., and Dokunikhin, N. S.

Title : The nature of the hydrogen bond and its effect on energy distribution in oscillatory and electron spectra of molecules

Periodical : Dok. AN SSSR 100/2, 323-326, Jan 11, 1955

Abstract : Two cases of formation of hydrogen bonds of uniform nature are cited. The problem concerning the nature of hydrogen bonds and its manifestation in electron spectra of molecules is discussed. The formation of a single electron cloud which binds two oxygen and proton atoms was observed in the presence of relatively small spaced between the atoms in the O - H - O bond.

Institution : The L. Ya. Karpov Scient.-Research Physico-Chemical Institute

Presented by : Academician A. N. Terenin, April 20, 1954

Periodical : Dok. AN SSSR 100/2, 323-326, Jan 11, 1955

Card 2/2 Pub. 22 - 33/52

Abstract : The inclusion of the hydrogen atom in the π -electron reaction of the molecule is followed by a specific deformation of the electron cloud and corresponding energy changes. Deformation of the electron cloud of the H atom during the formation of an intramolecular bond with the π -electron effect was found to be different from the deformation where the dipole effect plays an important role in the H-bond formation. Eight references: 5 USSR, 2 USA and 1 German (1914-1953). Diagram

DOKUNIKHIN, N.S.
USSR/Chemistry - Physical chemistry

Card 1/2 Pub. 22 - 36/60

Authors : Shigorin, D. N., and Dokunikhin, N. S.

Title : Appearance of a hydrogen bond in oscillatory and electron spectra of amino substitutes of anthraquinone

Periodical : Dok. AN SSSR 100/4, 745-748, Feb 1, 1955

Abstract : The absorption spectra in the infrared zone were investigated for a large group of amino substitutes of anthraquinone to determine the relations between the spatial orientation of the groups which take active part in the formation of hydrogen bonds and the nature of their appearance in oscillatory and electron spectra of molecules. It was observed that the conversion of the solid dye into vaporous state as result of the disturbance of the inter- and intramolecular hydrogen bonds is followed by a sudden change in its oscillatory and electron spectra. It was determined that the intramolecular hydrogen bond is capable of causing certain changes in

Institution : The L. Ya. Karpov Scientific Research Phys-Chem. Institute

Presented by: Academician A. N. Terenin, June 21, 1954

Periodical : Dok. AN SSSR .00/4, 745-748, Feb 1, 1955

Card 2/2 : Pub. 22 - 36/60

Abstract : the distribution of the π -electron density in the molecule even if the electron of the hydrogen atom does not directly react with the π -electron of the neighboring group. Five USSR references (1949-1954). Diagram.

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Dist: 4E43 7
Exchange of sulfo groups for chlorine in anthraquinone derivatives. N. S. Dokupikhin and L. M. Erova. *Khim. Nauka i Prom.* 2, 132(1957). The yield of chloro-anthraquinone from reaction of 1-anthraquinonesulfonic acid with Cl₂ gas can be improved by adding certain initiators: H₂O₂, Na persulfate, benzenesulfonic acid hydrazide, hydrazine sulfate, sulfamic acid, urea, biuret, guanidine nitrate, diacetylamide, and NH₄Cl were tested. All of these substances and hydrazine sulfate increase the yield of

3
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DOKUNIKHIN, N.S.; PLETNEVA, I.D.

Reaction of hydrazine with nitro compounds of the anthraquinone series.
Zhur. ob. khim. 27 no.3:791-794 Mr '57. (MLBA 10:6)

1. Nauchno-issledovatel'skiy institut organicheskikh poluproduktov i
krasiteley imeni K.Ye. Voroshilova.
(Hydrazine) (Anthraquinone)

DOKUNICHIN, N.S., Doc Chem Sci—(diss) "New reactions of arylisocyanates, arylisothiocyanates and certain products of their transformation."
Mos, 1958. 22 pp incl cover (Min of Higher Education USSR. Len Order of Lenin Chem-Technological Inst im D.I. Mendeleev), 110 copies (Kb, 26-58, 106)

-18-

DOKUNIKHIN, N.S.; GAYEVA, L.A.

Dyes from benz[cd]indole. Khim. nanka 1 prom. 3 no.1:126-127 '58.
(MIRA 11:3)

1. Nauchno-issledovatel'skiy institut organicheskikh poluproduktov
i krasiteley im. K.Ye. Voroshilova.
(Benzindole) (Dyes and dyeing)

DOKUNIKHIN, N.S.; GAYEVA, L.A.

4,10-Dibenzoylanthanthrone and products of its cyclization. Khim.
nauka i prom. 3 no.2:280 '58. (MIRA 11:6)

1. Nauchno-issledovatel'skiy institut organicheskikh poluproduktov
i krasiteley im. K.Ye. Voroshilova.
(Dibenzopyrene) (Cyclization)

DOKUNIKHIN, N.S.; LISSENKOVA, G.S.

Substitution of a sulfo group for a nitro group in anthraquinonesulfonic acids. Khim. nauka i prom. 3 no.2:280-281 '58. (MIRA 11:6)

1. Nauchno-issledovatel'skiy institut organicheskikh poluproduktov i krasiteley im. K.Ye. Voroshilova.
(Anthraquinonesulfonic acid)

AUTHORS:

Dokunikhin, N. S., Pletneva, I. D.

79-28-4-37/60

TITLE:

Interaction Between Hydrazine and Nitro Compounds of the Anthraquinone Series (Vzaimodeystviye gidrazina s nitrosoyedineniyami ryada antrakhinona).

II. Synthesis of the Vat Dyes - the Derivatives of the Pyrazolanthronecarboxylic Acid (II. Sintez kubovykh krasiteley - proizvodnykh pirazolantronkarbonovoy kisloty)

PERIODICAL:

Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 4, pp. 1019-1022 (USSR)

ABSTRACT:

In the previous communication (Reference 1) the formation of the pyrazolanthrone derivatives by action of hydrazine on nitro compounds of the anthraquinone series and on the 1-nitroanthraquinone-2-carboxylic acid and its phenyl amide was described. In the continuation of the work the authors applied the found method to the synthesis of more complicated substances, which have the properties of vat dyes. In the patent literature (References 2 and 3) as a yellow vat dye was described

Card 1/3

Interaction Between Hydrazine and Nitro Compounds
of the Anthraquinone Series. II. Synthesis of the
Vat Dyes - the Derivatives of the Pyrazolanthrone-
carboxylic Acid

79-28-4-37/60

the (1'-anthraquinocyl)-amide of the pyrazolanthrone-2-
-2-carboxylic acid. This compound was obtained by the
authors by means of action of the hydrazine in pyridine
upon the N-(1-anthraquinonyl)-amide of the 1-nitroan-
thraquinone-2-carboxylic acid. It proved to be identical
with the acylation product of the 1-aminoanthraquinone by
means of chloroanhydride of the pyrazolanthrone-2-carbo-
xylic acid. In the interaction of the chloroanhydride of
the pyrazolanthrone-2-carboxylic acid with 1-aminoanthra-
quinone-2-carboxylic acid in the presence of $AlCl_3$, was ob-
tained the 5,6-phthaloyl-2,4,1-benzoxazine-3-(2'-pyrazolan-
thronyl). This results with ammonia and methylamine the
7,8-phthaloyl-3,4-dihydro-4-oxo-2-(2-pyrazolanthronyl)-
-quinazoline and the 7,8-phthaloyl-3,4-dihydro-4-oxo-3-
-methyl-2-(2'-pyrazolanthronyl)-quinazoline.
There are 6 references, all of which are Soviet.

Card 2/3

Interaction Between Hydrazine and Nitro Compounds
of the Anthraquinone Series. II. Synthesis of the
Vat Dyes - the Derivatives of the Pyrazolanthrone-
carboxylic Acid

79-28-4-37/60

ASSOCIATION: Nauchno-issledovatel'skiy institut organicheskikh
poluproduktov i krasiteley (Scientific Research
Institute for Organic Semiproducts and Dyes)

SUBMITTED: March 16, 1957

Card 3/3

AUTHORS: Dokunikhin, N. S., Kurdyumova, T. N. SOV/79-28-7-57/64

TITLE: Investigation in the Field of Polycyclic Quinones (Issledovaniye v oblasti politsiklicheskikh khinonov) III. The Reaction of 1-Halogene Anthraquinone With Secondary Aliphatic-Aromatic Amines (III. Vzaimodeystviye 1-galoidantrakhinona so vtorichnymi zhirnoaromaticheskimi aminami)

PERIODICAL: Zhurnal obshchey khimii, Vol 28, Nr 7, pp 1979 - 1984 (USSR)

ABSTRACT: Besides the experiments described in references 1,2 and 3 carried out with 1-halogene anthraquinones and aliphatic amines (Refs 1,2) no reactions of the 1-halogen substituted anthraquinones with secondary aromatic amines as well as no properties of the N,N'-alkylaryl substituted 1-aminoanthraquinones have been described in publications. Contrary to earlier experiments (Ref 4) in which 95% of the initial product 1-chloro anthraquinone had been isolated, in the case of a heating of 1-chloro anthraquinone in excess methylaniline at higher temperature in the presence of potassium acetate, acetic and metallic copper from the reaction mass 47,8% 1-N,N'-methylphenylamino anthraquinone, 11% 1-aniline anthraquinone and

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Investigation in the Field of Polycyclic Quinones.

SOV/79-28-7-57/64

III. The Reaction of 1-Halogen Anthraquinone With Secondary Aliphatic-Aromatic Amines

28,8% anthraquinone could be isolated. According to the experiments of some scientists (Refs 5,6,7) the substitution of the earlier used potassium acetate by potash also in the present case lead to a slowing down of the reaction of chloro anthraquinone with methylaniline so that they could find 33,5% 1-chloro anthraquinone which was not reacted through. On a further more intensive heating 26,7% 1-N,N-methylphenylamino-anthraquinone, 10,6% 1-aniline anthraquinone and 51,5% of an uncolored product (without halogen, and high-melting at about 420°) was obtained, which could be identified as 1,1' dianthraquinonyl (Ref 6°). The character of the dehalogenation products depends, however, not only on the acid-forming agent. In view of the near-natural character of aniline and methylaniline as solvent it was of interest to carry out the comparison on the same conditions of dehalogenation of the 1-chloro anthraquinone in its conversion with primary and secondary amines. Only 1,5% anthraquinone could be isolated from the reaction mass of 1-chloro anthraquinone with aniline. Therefore the final products

Card 2/3

Investigation in the Field of Polycyclic Quinones, SOV/79-28-7-57/64
III. The Reaction of 1-Halogene Anthraquinone With Secondary Aliphatic-Aromatic Amines

of the reaction of N-alkylanilines with α -halogene anthraquinones (besides the N,N-alkylarylamino substituted compounds of anthraquinone) are the N-monoaryl substituted products and those of the dehalogenation of 1-halogene anthraquinone. There are 1 table and 9 references, 4 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut organicheskikh poluproduktov i krasiteley (Scientific Research Institute of Organic Semi-Finished Products and Dyes)

SUBMITTED: June 6, 1957

1. Anthracenes--Chemical reactions 2. Amines--Chemical reactions

Card 3/3

AUTHORS: Dokunikhin, N. S., Gayeva, L. A. SOV/79-28-10-9/60

TITLE: Derivatives of Benz-(c,d)-Indoline (Proizvodnyye benz-(c,d)-indolina) I. Thionaphtho Styryle and N-Methyl Thionaphtho Styryle (Tionaftostiril i N-metiltionaftostiril)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol 28, Nr 10, pp 2670 - 2672 (USSR)

ABSTRACT: The chemistry of benz-(c,d)-indole is little investigated (Ref 1). It was mentioned only in connection with the structure of the Lyserg acid - a decomposition product of the indole alkaloids. The non-substituted benz-(c,d)-indole is unknown as its synthesis could not be carried out until now (Ref 2). The benz-(c,d)-indoline was obtained in 1950 by the action of LiAlH_4 on naphtho¹ styryle (I) (Ref 3) in ethyl morpholine. Of interest to the investigator was the naphtho styryle as lactame of the 1,8-amino naphthoic acid which is an intermediate product in the synthesis of vat dyes of the anthanthrone series (Ref 4). The thio analog of naphtho styryle, 2-thiobenz-(c,d)-indoline (II)

Card 1/3

Derivatives of Benz-(c,d)-Indoline. I. Thionaphtho
Styrile and N-Methyl Thionaphtho Styrile

SOV/79-28-10-9/60

was obtained by the action of AlCl_3 on 1-naphthyl-isothiocyanate (Ref 5). It was of interest to find another synthesis of this compound and its N-alkyl substitution products, as the latter can not be synthesized by isomerization of the isothiocyanates. Compound (II) could be obtained from (I) by heating with P_2S_5 in xylene (Scheme 1). The marked acid

properties of the thionaphtho styrile pointed to the isomeric structure (IIa), which fact contradicted, however, the infrared spectrum taken of the crystals that pointed to NH. The substitution of oxygen by sulphur was also possible for the compound (III). Contrary to the synthesis mentioned in a French patent the authors succeeded in carrying out this synthesis by direct methylation of the naphtho styrile with dimethyl sulfate in alkali liquor and with the methyl ester of benzene sulfo acid (Scheme 2). There are 1 table and 6 references, 4 of which are Soviet.

Card 2/3

Derivatives of Benz-(c,d)-Indoline. I. Thionaphtho
Styrile and N-Methyl Thionaphtho Styrile

SOV/79-28-10-9/60

ASSOCIATION: Nauchno-issledovatel'skiy institut organicheskikh polupro-
duktov i krasiteley imeni K.Ye.Voroshilova, Moskva
(Scientific Research Institute for Organic Semi-Products
and Dyes imeni K. Ye. Voroshilov, Moscow)

SUBMITTED: September 2, 1957

Card 3/3

AUTHORS: Dokunikhin, N. S., Gayeva, L. A. SOV/79-28-11-9/55
TITLES: Derivatives of Benz-(C,D)-Indoline (Proizvodnyye
 benz-(C,D)-indolina)
 I. 6-Benzoylbenz-(C,D)-Indoline-2-on, -1-Methyl-6-Benzoylbenz-
 -(C,D)-Indoline-2-on, and Their Cyclization Products (II.
 6-Benzoylbenz-(C,D)-indolin-2-on-, 1-metil-6-benzoilbenz-
 -(C,D)-indolin-2-on i produkty ikh tsiklizatsii)
PERIODICAL: Zhurnal obshchey khimii, 1958, Vol 28, Nr 11, pp 2944-2948
 (USSR)
ABSTRACT: The N-acyl derivatives of aromatic amines yield amino
 substituted ketones under the action of aluminium chloride
 according to Fries (Fritz) (Refs 1-3). A similar reaction
 could unexpectedly not be realized with N-benzoyl naphtho-
 styryl. As the acylation of naphthostyryl in the aromatic
 nucleus according to Friedel and Crafts (Fridel', Krafts) was
 unknown the authors synthesized by the reaction of benzoyl
 chloride and AlCl₃ with the latter the 6-benzoylbenz-(C,D)-
 -indoline-2-on (I). Its structure was proved by its trans-
 formation into compound (VII). On a heating of (I) in alkali
 liquor the compound (II) is formed. The diazo compound (III)

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Derivatives of Benz-(C,D)-Indoline .

SOV/79-28-11-9/55

. II. 5-Benzoylbenz-(C,D)-Indoline-2-on, 1-Methyl-6-Benzoylbenz-(C,D)-
-Indoline-2-on, and Their Cyclization Products

obtained from it led to (IV). The alkali solution of the 8-oxy-5-benzoyl-1-naphthoic acid with dimethyl sulfate yielded the compound (V) and by saponification of this ester the free acid (VI). The decarboxylation of this acid met with difficulties as a chlorination takes place parallel to the closure of the cycle. Compound (VIII) reminds by its structure of the vat dye dibenzpyrene quinone (IX), it could, however, not be vatted by reduction with sodium hydrosulfite. This can be explained by the formation of the salt of the isomer (X) on the action of alkali, as this salt has only one $\text{C}=\text{O}$ group. There are 8 references, 4 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut organicheskikh poluproduktov i krasiteley imeni K. Ye. Voroshilova (NIOPIK) g.Moskva (Scientific Research Institute of Organic Semiproducs and Dyes imeni K. Ye. Voroshilov (NIOPIK) Moscow)

Card 2/3

20-119-1-23/52

AUTHORS: Dokunikhin, N. S., Gol'der, G. A., Zhdanov, G. S.

TITLE: The Radiographic Investigation of 1,4-di-Anilido-Anthraquinone and 1,4-Dimesido-Anthraquinone (Rentgenograficheskoye issledovaniye 1,4-dianilidoantrakhinona i 1,4-dimezido-antrakhinona)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 119, Nr 1, pp. 87 - 89 (USSR)

ABSTRACT: Sulfo acids of 1,4-di-(arylamino)-anthraquinone form an important group of solid dyes for wool. The majority of the 1,4-di-(arylamino)-substitutes of anthraquinone are green. An exception is made by the derivatives in which all hydrogen atoms, in an ortho-position, of the aryl-residues are substituted. Such compounds as well as the corresponding alkyl-amino-and hydro-aryl-amino-derivatives have an intensive bright-blue color. In the presence of methyl-ethyl-groups or of bromine atoms in all ortho-positions of the phenyl residues or in the position of 2,3-anthraquinone respectively

Card 1/6

20-119-1-23/52

The Radiographic Investigation of 1,4-di-Anilido-Anthraquinone and
1,4-Dimesido-Anthraquinone

the absorption in the short-wave range of light is absent and the chief maximum is displaced in the direction of the short waves, when the light absorption is measured by CCl_4 -solutions of 1,4-di-(arylamino)-anthraquinone in the visible and in the ultraviolet range of the spectrum (Reference 1). The appearance of an additional principal band and the deepening of the principal band in the absence of spatial disturbances might logically be considered a consequence of the coplanarity of the molecule. This is also indicated by the comparison of the absorption frequencies in the infrared spectral region (Reference 2). These data indicate the weakening of the inner-molecular hydrogen bond of the carbonyl-oxygen with the hydrogen of the amino groups in the presence of spatial obstacles of a coplanar orientation of the benzene nuclei. This bond is weakened by the increased distance due to the leaving of the plane of the anthraquinone-

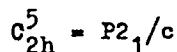
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cycles by hydrogen and is caused by the disturbance of the conjugation -system (Reference 3). It would be desirable to find a direct proof of the flat structure of the molecules of 1,4-di-(arylamino)-anthraquinone in the absence of spatial difficulties. For the purpose of deciding the problem of coplanarity of the benzene nuclei with the plane of the basic part of the molecule, crystals of both compounds mentioned in the title were radiographically measured. The results are given in table 1. From the dimensions of the elementary cell of the first compound can be assumed that the basic part of the molecule is here entirely or almost parallel with the ac-plane, as axis b is the shortest one (8,73 Å). From the conditions of symmetry of the spatial group

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follows that a slip plane with a displacement along axis c runs vertical to axis b. Thereby the 4 molecules occurring in the unit cell are orientated in layers which are perpendicular to axis b. A variant of this orientation is shown by figure 1. It admits a slight turn of the benzene nucleus in relation to the other part of the molecule as well as a certain possible turn of the entire molecule in relation to the plane ac. Thus the packing of the molecules in the crystal does not require an additional change of the angle of rotation of the benzene nucleus as compared to the free molecule. The shortest axis in the crystal of the second compound is the a-axis (7,98 Å). Its length corresponds to the dimensions of the benzene nucleus and to the CH₃-groups connected with it (8,8 Å). A solid packing of molecules in the crystal and the fulfilment of the conditions of symmetry of the spatial group for molecules of the second compound

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can take place in the case of an arrangement as shown in figure 2. The benzene nuclei are on that occasion turned by an angle of 90° or almost in relation to the basic part of the molecule. The benzene nuclei of the neighboring molecules are in some manner joined with each other, whereby the solid packing is created. Without this joining of the benzene nuclei the arrangement of the molecule due to the determined dimensions of the elementary cell is impossible. Due to such an arrangement of the molecules in the crystal of the second compound the possibility of torsional oscillations of the connected benzene nuclei is practically out of the question. The radiographic investigation of the crystals of the first compound shows that when there are no steric obstacles the connected benzene nuclei remain almost coplanar with the basic part of the molecule. In this connection the π -electronic interaction of the nitrogen atoms with the aromatic nucleus keeps its essential importance. The addition

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